

REMARKS

At the outset, the Examiner is thanked for the thorough review and consideration of the pending application. The final Office Action dated June 14, 2005 has been received and its contents carefully reviewed.

Claims 1-7 and 9-21 are currently pending. Reexamination and reconsideration of the pending claims is respectfully requested.

In the final Office Action, the Examiner rejected claims 1-7, 9-12 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Burroughes et al. (U.S. Patent No. 6,707,248) in view of Pichler (U.S. Patent No. 6,255,774); rejected claims 13, 14, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Burroughes et al. in view of Pichler and Applicant's Related Art ("ARA"); and rejected claims 15 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Burroughes et al. in view of Pichler and So et al. (U.S. Patent No. 5,731,661). Applicant respectfully traverses these rejections.

The rejection of claims 1-7, 9-12 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Burroughes et al. in view of Pichler is respectfully traversed and reconsideration is requested.

Claim 1 is allowable over the cited references in that claim 1 recites a combination of elements including, for example, "...a thin organic layer having a hole injection/transport layer, an organic light-emitting layer and an electron injection/transport layer; and a cathode, wherein the anode substrate, the thin organic layer and the cathode are sequentially stacked and wherein the cathode comprises first to fourth electrodes stacked on the thin organic layer." None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention. Accordingly, Applicant respectfully submits that claim 1 and claims 2-7 and 9-12, which depend from claim 1, are allowable over the cited references.

In the Office Action on page 2, the Examiner admits, "Burroughes does not exemplify the cathode comprising fourth electrode." In an attempt to cure the deficient teaching of Burroughes et al., the Examiner then cites Pichler to substitute the first electrode (layer of Ca) of Burroughes et al. by two electrode layers – first one thin electrode of an alkali metal and second one of conductive material covering the thin electrode. However, Applicant respectfully submits that the Examiners' citation of Pichler actually teaches away from the teaching of Burroughes et al.

Burroughes et al. discloses at Col. 7, lines 5-8, “[t]he layer 15 should be sufficiently thin to allow the effect to occur but sufficiently thick that it can be deposited reproducibly and uniformly (without excessive defects).” Burroughes et al. further discloses at Col. 4, lines 59-61, “[t]he layer 15 is of calcium and has a thickness of approximately 5 to 25 Å, preferably around 15 Å.”

However, Pichler discloses at Col. 2, lines 13-19, “[t]he cathode layer has a thickness of at most 5 nm, but preferably of between 0.5 and 2 nm thick. The thin, low work function cathode layer is preferably capped with another conductive layer, typically 100-500 nm thick, which provides high conductivity protection for the underlying thin, low work function layer, as well as environmental stability.” Because the thickness of the conductive layer alone is 100-500 nm (1000-5000 Å) in Pichler, which is much greater than the thickness of the layer 15 of calcium in Burroughes et al., there is no motivation for one of ordinary skill to substitute the first electrode (layer of Ca) of Burroughes et al. with the two electrode layers of Pichler.

Claim 17 is allowable over the cited references in that claim 17 recites a combination of elements including, for example, “...providing a thin organic layer on the anode substrate, the thin organic layer having a hole injection/transport layer, an organic light-emitting layer and an electron injection/transport layer; and forming a cathode on the thin organic layer, wherein the cathode comprises first to fourth electrodes stacked on the thin organic layer.” None of the cited references, singly or in combination, teaches or suggests at least this feature of the claimed invention. Accordingly, Applicant respectfully submits that claim 17 is allowable over the cited references.

The rejection of claims 13, 14, 18 and 19 under 35 U.S.C. § 103(a) as being unpatentable over Burroughes et al. in view of Pichler and ARA is respectfully traversed and reconsideration is requested. Since ARA fails to cure the deficiencies of Burroughes et al. and Pichler as discussed with respect to claims 1 and 17, claims 13, 14, 18 and 19 are allowable over the cited references.

The rejection of claims 15 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Burroughes et al. in view of Pichler and So et al. is respectfully traversed and reconsideration is requested. Since So et al. fails to cure the deficiencies of Burroughes et al. and Pichler as

discussed with respect to claims 1 and 17, claims 15 and 20 are allowable over the cited references.

Applicant believes the application is in condition for allowance and early, favorable action is respectfully solicited. If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at (202) 496-7500 to discuss the steps necessary for placing the application in condition for allowance. All correspondence should continue to be sent to the below-listed address.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. §1.136, and any additional fees required under 37 C.F.R. §1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Dated: September 14, 2005

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